Claims:

1. A radiation stress, non-invasive vital sign monitoring method comprising:

providing one or more discretized sensor arrays,

engaging the one or more discretized sensor arrays,

measuring and collecting discretized acoustic, electromechanical or other physiological signals with the discretized sensing array,

transmitting discretized signals to a receiving and computing device,

producing time series data from various discretized sensor array signals,

calculating energy spectrum from the time series data,

determining variance of each discretized sensor array,

calculating a value for vital signs of a patient.

2. The method of claim 1, wherein the vital signs are average, mean, systolic and diastolic arterial blood pressure.

3. The method of claim 1, wherein the vital signs are hypertension and related medical conditions.

4. The method of claim 1, further comprising lying on, standing on, or otherwise contacting the discretized sensor arrays.

5. The method of claim 1, wherein the collecting the discretized acoustic, electromechanical or other physiological signals is performed over a range of frequencies.

6. The method of claim 1, wherein the collecting the discretized acoustic, electromechanical or other physiological signals is performed over a single frequency.

7. The method of claim 1, wherein the collecting acoustic, electromechanical or other physiological signals further comprises collecting data in a time domain or frequency domain.

8. The method of claim 1, wherein the calculating a value for vital signs is performed with non-time series methods for determining energy at various array points or a combination of array points.

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9.   The method of claim 1, wherein the transmitting of discretized signals comprises transmitting discretized signals via wire, fiber optics or wirelessly.

10.   The method of claim 1, further comprising providing continuous, real-time monitoring of a patient's vital signs.

11.   The method of claim 1, further comprising calculating the momentum flux from data gathered from the discretized signal arrays.

12.   The method of claim 11, further comprising calculating a patient's vital signs from the momentum flux.

13.   The method of claim 1, wherein the one or more discretized sensor arrays are not attached to the patient.

14.   A radiation stress, non-invasive vital sign monitoring device comprising:

        one or more discretized sensor arrays for measuring and collecting
        discretized acoustic, electromechanical, or other physiological signals
        from a patient,
        a surface on the one or more discretized sensor arrays for engaging a
        patient,
        a transmission system for transmitting data collected by the one or more
        discretized sensor arrays,
        a receiving device for receiving the transmitted data from the one or more
        discretized sensor arrays, and
        a computing device connected to the receiving device for calculating
        values of vital signs of the patient by
                producing time series data from various discretized sensor array
        signals,
                calculating energy spectrum from the time series data, and
                determining variance of each discretized sensor array.

15.   The device of claim 14, wherein the vital signs are average, mean, systolic and diastolic arterial blood pressure.

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16.   The device of claim 14, wherein the vital signs are hypertension
and related medical conditions.

17.   The method of claim 14, wherein the patient lies on, stands on, or
otherwise contacts the discretized sensor arrays.

18.   The method of claim 14, wherein the discretized sensor arrays
collect the discretized acoustic, electromechanical or other physiological signals
over a range of frequencies.

19.   The method of claim 14, wherein the discretized sensor arrays
collect the discretized acoustic, electromechanical or other physiological signals is
performed over a single frequency.

20.   The method of claim 14, wherein the discretized sensor arrays
collect the discretized acoustic, electromechanical or other physiological signals in
a time domain or frequency domain.

21.   The method of claim 14, wherein the computing device calculates a .
value for vital signs with non-time series methods for determining energy at
various array points or a combination of array points.

22.   The method of claim 14, wherein the transmission system transmits
discretized signals via wire, fiber optics or wirelessly.

23.   The method of claim 14, wherein the discretized sensor arrays
provide continuous, real-time monitoring of a patient's vital signs.

24.   The method of claim 14, wherein the computing device computes
the momentum flux from data gathered from the discretized signal arrays.

25.   The method of claim 24, wherein the computing device further
computes a patient's vital signs from the momentum flux.

26.   The method of claim 14, wherein the one or more discretized
sensor arrays are not attached to the patient.